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The Culture of Table Beets

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S. DEPARTMENT OF AGRICULTURE

THE CULTURE OF TABLE BEETS

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Importance of the Beet Crop

Table or garden beets are grown under a wide range of soil and climatic conditions and are popular because of their value as human food and the comparative ease with which they can be grown. Beets are grown in the South as a fall, winter, and spring crop and as an early summer and fall crop in the northern part of the country. The relative ease with which beets may be kept for winter use by storage or by canning in the northern sections adds to their popularity. According to statistics compiled by the Bureau of Agricultural Economics for the period from 1928 to 1935, there were 9,500 to 12,200 acres devoted to beets for table use and from 6,340 to 7,950 acres devoted to growing beets for commercial canning. These figures, however, do not include the great quantities of table beets grown in home gardens. The increasing popularity of beets is due to the fact that the markets are now constantly supplied during the winter with freshly bunched beets.

Types of Beets

The beet is an exceedingly variable plant; several well-defined types are recognized by horticulturists, all of which originated from the wild plant known to botanists as *Beta vulgaris.* Most botanists recognize four types: The ordinary garden beet; the Swiss chard or leaf beet; the sugar beet; and the mangel, or stock beet. In this discussion garden or table beets are mainly considered. The sugar beet is frequently stored and used as a table beet during the winter.

Soils and Fertilizers

Garden beets are produced on a wide variety of soils, but, whatever soil is selected, it should be well enriched and should be one that warms up quickly in the spring. Most growers regard sandy loams as best adapted to beet culture, this being particularly true for the early spring crop. For later crops heavier soils can be employed, and such soils are very widely used for the midsummer and fall crops.

Land in good physical condition as the result of proper handling, well supplied with available plant food, and high in organic matter is essential if the best results with beets are to be attained. Because of the present scarcity of stable manure, soil-improving crops must be relied upon very largely for maintaining the organic matter in the soil. Table beets should not be planted on land immediately following the turning under of heavy crops of soybeans, cowpeas, wheat straw, or any material of that character, as the decaying cellulose material in the soil-improvement crop robs the beets of the required nitrogen. Where these crops are plowed under a year in advance, the land will, under most conditions, be suitable for the growing of beets. Commercial fertilizers containing 6 or 7 percent of nitrogen, 10 to 12 percent of phosphoric acid, and 5 or 6 percent of potash should be used at a rate of not less than 1,000 pounds to the acre, and on southern truck farms a ton of fertilizer to the acre is recommended.

Lime

The beet is exceedingly sensitive to soil acidity. If there is any doubt about the condition of the soil in this respect, it should be carefully tested and lime applied if the test shows that it is needed. In general, a soil more acid than that indicated by a pH (hydrogen-ion concentration) of 6.0 is unsuitable for beets without liming. The best results are usually obtained when the pH is between 6.0 and 6.9. Upon soils known to be acid or "sour" and in the absence of definite tests showing the exact need of the soil for lime, it will usually be wise to make a moderate application of lime to the land at least a week or two before sowing beets. From 500 to 1,000 pounds of hydrated lime per acre is usually sufficient.

Varieties and Seed

Extra Early Egyptian, Early Wonder, and Crosby Egyptian are three of the best of the early varieties of beets. Detroit Dark Red and Crimson Globe are excellent late sorts. The latter varieties are very generally used for canning because of their deep-red color, which gives the kind of product the market demands. Much attention has been given to the development of special strains of beets for various purposes, and it is possible to obtain excellent stocks of beets. Beet seed, if properly cared for, will retain its vitality 2 or 3 years, but, as a rule, it is not advisable to plant seed that is more than 2 years old. Each seed ball contains two to three seeds.

Preparation of the Soil

Owing to the fact that beet plants are small and very weak when young, the soil should be prepared in the best possible manner. Soils that are inclined to pack or form a crust after a rain are not adapted to the growing of beets, on account of the difficulty in getting the beet seeds to come up. The soil should be free from any and all rough material and should be pulverized to a depth of several inches. The surface should be brought to a smooth finish before the seeds are sown. Where small areas are planted to beets the surface may be finished with a steel rake, but where beets are planted on a large scale a Meeker harrow or a drag should be used ahead of the seed drill.

Fertile land only should be selected for rhubarb culture, but it is also usually necessary to apply liberal quantities of both manure and fertilizer. As a preliminary treatment before planting, a broadcast application of 20 to 30 tons of manure and 1,500 to 2,000 pounds of a complete fertilizer per acre is recommended. In view of the present difficulty in obtaining manure the organic content of the soil may often be increased by growing soil-improvement crops upon it and turning them under. A fertilizer containing 5 percent of nitrogen, 10 percent of phosphoric acid, and 4 to 6 percent of potash is suitable. In addition to this preliminary treatment, the mixing of manure with the soil under the rows or hills before planting is advisable. It is also desirable to make annual applications of manure and fertilizer. From 15 to 20 tons of manure and 1,000 pounds per acre of a 5–10–4 fertilizer are usually sufficient. On highly organic soils, such as peat and muck, it is possible to grow good rhubarb without manure, but liberal applications of fertilizer each season are necessary, and soybeans or some other soil-improvement crop may often be grown between the rows during the summer.

Propagation, Planting, and Varieties

Rhubarb is usually propagated from divisions of the crowns formed during previous seasons. The pieces for planting are obtained by dividing the crowns, preferably in the early spring, leaving as much root as possible with each strong eye or bud. Sometimes rhubarb is propagated from seed, but it rarely proves satisfactory because seeds usually produce only a small percentage of plants like the mother plant. For this reason the use of crown divisions is recommended.

The rows should be far enough apart to allow easy horse tillage, not less than 5 feet for strong-growing varieties on good land. The plants should be spaced from 3 to 4 feet apart in the rows, the crowns set 4 inches below the surface so that they will be covered with 2 or 3 inches of soil, the soil firmed about the roots with the feet.

The varieties most commonly grown are Victoria, Linnaeus, and Mammoth Red. Recently two new varieties, the McDonald and Cherry Red, have become popular, the McDonald in Minnesota and nearby States and the Cherry Red in California and other Pacific Coast States.

Cultivation

Good surface tillage is all that is required. This consists of a thorough stirring of the soil at frequent intervals until late summer. Weeds should always be kept under control. Soon after the ground is frozen it is well to cover the rows with strawy manure. Instead of mulching in this manner, some growers hill up the rows by means of a plow and then apply a light mulch of manure. These ridges are worked down during early spring, and the manure incorporated in the soil. In many cases an application of strawy manure is made to the rows during the early spring or immediately after the ridges are worked down. This material protects the plants from cold and encourages early growth. Mulching of this character is often done in lieu of the yearly application of manure, as suggested under Soil, Fertilizer, and Manure.

In order to renew rhubarb plantations, the plants are sometimes taken up and reset. It is usually a better practice to divide the crowns during the third or fourth year by removing the soil from one side of the hill with a plow or with a sharp spade and cutting through the crown, leaving three or four buds undisturbed in the hill. If desired, the portion removed may be set out for increasing the rhubarb patch or field. This work should be done in the fall or early in the spring.

In the home garden the rhubarb hills should be thinned, as suggested; otherwise the crowns will become so large and so crowded with small buds that only slender, undesirable stalks will be produced.

Diseases and Insects

Foot rot is the most serious disease affecting rhubarb. It is caused by a fungus which attacks and rots the base of the stalks, causing them to fall over, and often kills the plants. The best remedy available where this disease occurs is to remove the affected plants and to spray the base of the stalks in the healthy hills with bordeaux mixture before the disease appears.

There is one insect that may give trouble, the rhubarb curculio. This is a rusty snout beetle about three-fourths of an inch long. It bores into the stalks, crowns, and roots. It also attacks the wild dock, which may grow in the vicinity. This insect may be kept in control by hand picking, by burning all infested plants, and by destroying all the wild dock growing in the neighborhood of the rhubarb patch in July, after the beetles have laid their eggs.

Harvesting and Marketing

No leafstalks should be pulled the first year from newly set plants, and only a few should be removed the second year. The commercial rhubarb season is short, rarely extending over more than 2 months. Only the largest and best stalks should be harvested. The leafstalks separate readily from the crown and are easily harvested by grasping them near the base and pulling slightly to one side in the direction in which the stalk stands. The smaller stalks are often thinned somewhat to permit better development of those remaining. After the market season of rhubarb is past, the plants are allowed to grow as they will, except for the removal of the seedstalks, which should be cut off as soon as they arise, in order to conserve the energy of the plant for the production of foliage and roots. A heavy crop of rhubarb in any year depends to a large extent on the strong leaf growth of the year before.

From two to five stalks, depending on their size, are tied in a bunch for market. Good strong plants should produce about 3,000 dozen bunches per acre each year. United States standards for field-grown rhubarb have been established and copies can be obtained by writing the Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.

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